The present coating thickness gauge according to exemplary embodiments of the invention thus provides many important advantages in obtaining coating thickness measurement data. By combining a portable computing unit such as a Personal Digital Assistant with a coating thickness gauge probe via a PCMCIA interface, the invention greatly enhances the computing options available for obtaining and processing coating thickness measurements on-site. Thus, the user may perform data analysis, enter descriptive comments, control the gauge with icons, and generally harness the power of a large display, resident software, and regular upgrades of the portable computing unit. Moreover, these advantages are provided in a coating thickness gauge which is substantially less expensive to manufacture than commercially available gauges.

The above-described exemplary embodiments are intended to be illustrative in all respects, rather than restrictive, of the present invention. Thus the present invention is capable of many variations in detailed implementation that can be derived from the description contained herein by a person skilled in the art. All such variations and modifications are considered to be within the scope and spirit of the present invention as defined by the following claims.

What is claimed is:

1. A method of recording coating thickness measurements, comprising the steps of:

obtaining a plurality of coating thickness values with a probe electrically connected to an electronic memory;

recording in the electronic memory the plurality of coating thickness values; and

recording in the electronic memory a plurality of descriptive data, each descriptive data is associated with a respective one of the coating thickness values and provides information concerning the respective one coating thickness value.

2. The method of claim 1, wherein the steps of recording the coating thickness values and of recording the descriptive data are performed alternately.

3. The method of claim 1, wherein the coating thickness values are transmitted to the electronic memory via a PCMCIA card.

4. The method of claim 1, wherein the descriptive data comprise text.

5. The method of claim 1, wherein the descriptive data are recorded by transforming text handwritten on a computer screen with a writing instrument into digital data.

6. The method of claim 1, wherein the descriptive data are defined with reference to an electronic pictorial representation of a coated article.

7. The method of claim 6, wherein the descriptive data represent locations on the electronic pictorial representation of the coated article.

8. The method of claim 1, further comprising the step of displaying a plurality of indicia on a graph on a video display screen, the indicia representing the plurality of coating thickness values.

9. The method of claim 8, further comprising the step of retrieving one of the descriptive data by selecting on the graph one of the indicia.

10. An apparatus for measuring a coating thickness, comprising:

a probe which generates a first signal representative of a measured coating thickness; and

a PCMCIA card connected to the probe and which receives the first signal from the probe, the PCMCIA card including means for converting the first signal into a second signal which is compatible with a standard PCMCIA output format.

11. The apparatus of claim 10, wherein the probe comprises an LC oscillator.

12. The apparatus of claim 11, wherein the PCMCIA card includes a counter which measures a frequency of the LC oscillator.

13. The apparatus of claim 10, wherein the probe comprises a permanent magnet and a Hall sensor.

14. The apparatus of claim 13, wherein the probe further comprises an eddy current search coil.

15. The apparatus of claim 10, wherein the probe includes means for discriminating between a ferrous and a nonferrous substrate upon which the coating is coated.

16. The apparatus of claim 10, further comprising a portable computing unit which includes a PCMCIA port for receiving the PCMCIA card.

17. The apparatus of claim 16, wherein the portable computing unit includes a touch-sensitive screen, and the portable computing unit receives descriptive data from a user via the screen.

18. The apparatus of claim 17, further comprising a pointed writing instrument for entering the descriptive data.

19. The apparatus of claim 17, wherein the portable computing unit comprises a memory and is adapted to alternately record in the memory the descriptive data from the user and numerical data from the second signal which numerical data represent a coating thickness.

20. The apparatus of claim 19, wherein the descriptive data are defined with reference to a pictorial representation on the screen of an article upon which a coating is coated.

21. An apparatus for measuring and recording coating thickness measurements, comprising:

an electronic memory;

means for obtaining a plurality of coating thickness values with a probe electrically connected to the electronic memory;

means for recording in the electronic memory the plurality of coating thickness values; and

means for recording in the electronic memory a plurality of descriptive data so that each descriptive data is associated with a respective one of the coating thickness values and provides information concerning the respective one coating thickness value.

22. The apparatus of claim 21, wherein the coating thickness values are transmitted to the electronic memory via a PCMCIA card.

23. The method of claim 1, wherein the descriptive data includes textual descriptions of the associated coating thickness values.

24. The method of claim 1, wherein the descriptive data includes an image of an object measured to obtain the plurality of coating thickness values.

25. The method of claim 1, wherein the descriptive data provides a description of a source of the coating thickness values.

26. The apparatus of claim 21, wherein the descriptive data includes textual descriptions of the associated coating thickness values.

27. The apparatus of claim 21, wherein the descriptive data includes an image of an object measured to obtain the plurality of coating thickness values.

28. The apparatus of claim 21, wherein the descriptive data provides a description of a source of the coating thickness values.

29. The method of claim 1, further comprising the step of inputting the plurality of descriptive data via an input device prior to recording the plurality of descriptive data.

30. The apparatus of claim 21, further comprising means for inputting the plurality of descriptive data.

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31. A method of recording coating thickness measurements with an electronic device that includes a probe connected to an electronic memory, the method comprising the steps of:

(a) taking a coating thickness reading at a location with a probe to obtain a coating thickness value;

(b) recording the coating thickness value in the electronic memory;

(c) after recording the coating thickness value in the electronic memory, inputting to the electronic device descriptive data concerning the coating thickness value; and

(d) recording the descriptive data in the electronic memory so that the descriptive data is associated with the coating thickness value in the memory.

32. The method according to claim 31, wherein the descriptive data identifies the location from which the coating thickness reading was taken.

33. The method according to claim 31, further comprising repeating steps (a) through (d) a plurality of times so that there is a plurality of coating thickness values in the electronic memory and each of the coating thickness values is associated with its respective descriptive data.

34. The method according to claim 33, further comprising the step of performing a statistical analysis of the plurality of coating thickness values.

35. The method according to claim 31, wherein the electronic device includes a screen, and using the screen as a graphical interface to input the descriptive data.

36. The method according to claim 35, wherein the data is entered using a pictorial representation of the location.

37. The method according to claim 35, wherein the screen is a touch-sensitive screen and the data is entered by touching the screen.

38. The method according to claim 35, wherein the data is entered by converting handwriting on the screen into text data.

39. An apparatus for taking a coating thickness measurement, comprising:

a probe which generates a signal representative of a measured coating thickness; and

a connector connected to the probe for connecting the probe to any one of a number of different commercially available types of nondedicated, palm-size, personal computing devices, the connector including a standard interface usable with any one of the personal computing devices.

40. The apparatus of claim 39, wherein the personal computing devices are PDA's (Personal Digital Assistants).

41. The apparatus of claim 40, wherein the PDA's include a screen display interface.

42. An apparatus for taking a coating thickness measurement, comprising:

a probe which generates a signal representative of a measured coating thickness;

a signal convertor that receives the signal generated by the probe; and

a connector connected to the signal convertor for connecting the apparatus to

any one of a number of different commercially available types of nondedicated, palm-size, personal computing devices, the connector including a standard interface usable with any one of the personal computing devices.

43. The apparatus of claim 42, wherein the signal convertor is a microprocessor that receives the signal generated by the probe and converts the signal generated by the probe into a signal usable by any one of the number of different types of nondedicated, palm-size personal computing devices.

44. The apparatus of claim 42, wherein the personal computing devices are PDA's (Personal Digital Assistants).

45. The apparatus of claim 44, wherein the PDA's include a screen display interface.